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SHUMAKER & SIEFFERT, P.A. 1625 RADIO DRIVE, SUITE 300 WOODBURY, MN 55125			EXAMINER RICHARDSON, THOMAS W	
			ART UNIT 2444	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pairedocketing@ssiplaw.com

Office Action Summary

Application No.

10/687,989

Applicant(s)

PILLAY ESNAULT, PADMA

Examiner

THOMAS RICHARDSON

Art Unit

2444

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 5-16, 18-27, 30-35 and 37-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5-16, 18-27, 30-35, and 37-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1, 5-16, 18-27, 30-35, and 37-41 are pending for examination.

Claims 2-4, 17, 28, 29, and 36 are cancelled.

Claims 7 and 14 are amended.

Claims 1, 5-16, 18-27, 30-35, and 37-41 are rejected.

Response to Arguments

1. Applicant's arguments filed 16 April 2009 have been fully considered but they are not persuasive. Applicant argues that cited references Sankaran (US 2003/0231587), Hunt (*TCP/IP Network Administration*), and Cisco "BGP Restart Session After Max-Prefix Limit") do not teach the limitations of the claims. Examiner disagrees.

2. As per claim 1, applicant argues that cited references do not teach maintaining a count of routes exported from an exterior protocol to an interior protocol on a device and rejecting additional routes exported from the exterior protocol to the interior protocol. Applicant argues that Cisco fails to overcome the deficiency in Sankaran of not teaching that a device receives a limit command. As stated in previous action, Sankaran teaches that a device may reject routes once a predefined limit of memory space is reached (paragraph 45). As such, a memory threshold, being a percentage of the memory, would hold a certain number of routes, as each route takes a certain amount of memory to be stored. Cisco's teachings then allow a device to set a limit to how many routes are exported, in such a way that one of ordinary skill in the art would have found obvious from the standpoint of a memory threshold such as taught by Sankaran. A memory percentage threshold limits the number of routes in the same manner, as each route

would take a known amount of memory within a defined memory space to be stored and utilized by the device. Applicant further argues that Hunt fails to overcome deficiencies in Sankaran and Cisco of teaching exporting routes from an exterior protocol to an interior protocol. Hunt teaches that a single device may be utilized to export routes from one protocol to another within a network system. Sankaran notes that both exterior (BGP) and interior (OSPF) protocols are used within the internet (paragraph 3) to give the system greater capabilities. Hunt's utilization of both protocols within a device would have been obvious to one of ordinary skill in the art in view of Sankaran, as each protocol used within a network system may be limited. Sankaran further goes to point out that threshold values may be different for interior and exterior protocols (paragraph 42), allowing the utilization of his method of limiting routes for both exterior and interior protocols. As such, the rejection of claim 1 is maintained.

3. As per claim 7, applicant argues that claim 7 contains similar limitations to claim 1 and therefore the arguments with respect to claim 1 are applicable. Examiner's arguments with regard to claim 1 are therefore also applicable, and the rejection of claim 7 is maintained. Applicant also argues with respect to claim 7 that cited references do not teach updating routing information received prior to the limit being met. Sankaran teaches that redundant routes may be deleted, such that once a threshold is reached, the preferential routes are maintained and utilized such that the newly added routes are no longer rejected (paragraph 39).

4. As per claim 11, applicant argues that claim 11 contains similar limitations to claim 1 and therefore the arguments with respect to claim 1 are applicable. Examiner's

arguments with regard to claim 1 are therefore also applicable, and the rejection of claim 11 is maintained.

5. As per claim 16, applicant argues that claim 16 contains similar limitations to claim 7 and therefore the arguments with respect to claim 7 are applicable. Examiner's arguments with regard to claim 7 are therefore also applicable, and the rejection of claim 16 is maintained.

6. As per claim 37, applicant argues that claim 37 contains similar limitations to claims 1 and 7, and therefore the arguments with respect to claims 1 and 7 are applicable. Examiner's arguments with regard to claim 1 are therefore also applicable, and the rejection of claim 37 is maintained.

7. As per claim 5, applicant argues that cited references do not teach associating routes with a maximum metric when the count exceeds a threshold. Sankaran teaches that redundant routes may be deleted based on a preference, such that once a threshold is reached, the preferential routes are maintained and utilized such that the newly added routes are no longer rejected (paragraph 39). In addition, Sankaran teaches that a preferential route may be one that has the fewest hops (paragraph 5). As such, the rejection of claim 5 is maintained..

8. As per claim 9, applicant argues that cited references do not teach maintaining counts for instances of protocols and rejecting additional routes. Sankaran teaches rejecting additional routes by a device (paragraph 45). In order for this to occur, it is inherent that a count must be maintained with respect to the threshold, otherwise the

device would have no means of detecting when a threshold is reached, as there would be no baseline value to compare the threshold value and increasing value to.

9. As per claim 14, applicant argues that cited references do not teach rebuilding a routing table when a limit is reached for importing from an interior protocol to an exterior protocol. Sankaran teaches redefining a table in response to reaching a threshold value (paragraphs 43-45), such that when a certain threshold is reached, the table may be redefined by deleting redundant routes based on a maximum metric, such as a distance metric (paragraph 39). Although Sankaran does not expressly teach utilizing the threshold between an interior and an exterior protocol, Sankaran notes that both exterior (BGP) and interior (OSPF) protocols are used within the internet (paragraph 3) to give the system greater capabilities. Hunt's utilization of both protocols within a device would have been obvious to one of ordinary skill in the art in view of Sankaran, as each protocol used within a network system may be limited. Sankaran further goes to point out that threshold values may be different for interior and exterior protocols (paragraph 42), allowing the utilization of his method of limiting routes for both exterior and interior protocols. Applicant further argues with respect to claim 14 that cited references do not teach that the network device advertises updated routing information to other network devices. Hunt teaches that routing updates are sent via OSPF (page 10, paragraph 1). As such, rejection of claim 14 is maintained.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0231587, Sankaran et al and *TCP/IP Network Administration*, Hunt.

12. As per claim 7, Sankaran teaches a method comprising:
maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached); and
rejecting additional addresses when the count exceeds an address limit (paragraph 45, where additional routes may be discarded once a threshold is reached); and
updating routing information when the count exceeds the limit to clear routes previously exported prior to the count exceeding the export limit (paragraph 45, where routes may be deleted from the table when a limit is reached or exceeded).

Sankaran does not expressly teach an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a

defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

13. Claims 1, 5, 8-16, 18-27, 30-35 and 37-41 rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0231587, Sankaran et al, "BGP Restart Session After Max-Prefix Limit," Cisco Systems and *TCP/IP Network Administration*, Hunt.

14. As per claim 1, Sankaran teaches a method comprising:
specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);
maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached); and
rejecting additional addresses when the count exceeds an address limit (paragraph 45, where additional routes may be discarded once a threshold is reached).

Sankaran does not expressly teach receiving a command to limit the number of routes. Cisco teaches a prefix limit comprising:

receiving a command from a client for an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes

that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

15. As per claim 5, Sankaran further teaches updating routing information to associate the routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices when the count exceeds the export limit (paragraph 5, where the redundant routes may be preferenced by distance); and advertising the updated routing information to a network device (paragraph 3, where the network may redefine paths using BGP or OSPF).

16. As per claim 8, Sankaran teaches a method comprising:
specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);
maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached); and
rejecting additional addresses when the count exceeds an address limit (paragraph 45, where additional routes may be discarded once a threshold is reached).

Sankaran does not expressly teach receiving a command to limit the number of routes.

Cisco teaches a prefix limit comprising:

waiting for a intervention by the client before accepting additional routes (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes

that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

17. As per claim 9, Sankaran further teaches maintaining a count comprising maintaining respective counts for instances of the interior routing protocol (), and wherein rejecting additional routes comprises:

- identifying one of the instances of the interior routing protocol to which the routes were exported (paragraph 43, where the counting module counts for the specific instance of the modification device that it is located on);

- comparing the respective value for the identified one of the instances (paragraphs 43-45, the threshold value is determined to be reached or not); and
- rejecting additional routes exported to the interior routing protocol to the identified one of the instances based on the comparison (paragraph 45, where all routes may be rejected after the threshold is reached).

18. As per claim 10, Sankaran further teaches:

- an export limit (paragraph 29, where a threshold may be established); and

- maintaining the respective count for the specified instance (paragraph 35, where a threshold may be reached).

Cisco further teaches receiving a prefix limit command that specifies the export limit and an associated one of the instances of the protocol (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

19. As per claim 11, Sankaran teaches a method comprising:

specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);

maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached).

Sankaran does not expressly teach receiving a command to limit the number of routes.

Cisco teaches a prefix limit comprising:

receiving a command from a client for an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the

addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

20. As per claim 12, Sankaran further teaches:

an export limit indicative of a maximum number of routes that can be exported (paragraph 29, where a threshold may be established);

comparing the counted number of routes to the export limit (paragraph 35, where a threshold may be reached); and

rejecting additional routes exported when the counted number of routes exceeds the export limit (paragraph 45, where additional routes may be discarded once a threshold is reached).

21. As per claim 13, Cisco further teaches waiting for a intervention by the client before accepting additional routes (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

22. As per claim 14, Sankaran further teaches operating the network device in an overload condition in which the network device (i) updates routing information to clear the routes previously exported, (ii) rebuilds the routing information of the device by updating the routing information to associate routed with a maximum metric that defines a maximum distance (paragraph 5, where the redundant routes may be preferred by distance, also paragraphs 43-45, where the network device may redefine the routing table by deleting redundant routes in response to going over a threshold limit).

Hunt further teaches advertising the updated routing information to a network device (page 10, paragraph 1, where the routing information is advertised via OSPF).

23. As per claim 15, Sankaran further teaches updating routing information when the count exceeds the limit to clear the routes exported (paragraph 45, where routes may be deleted from the table when a limit is reached or exceeded).

24. As per claim 16, Sankaran teaches a method comprising:

specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);

maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached).

Sankaran does not expressly teach receiving a command to limit the number of routes.

Cisco teaches a prefix limit comprising:

receiving a command from a client that specifies an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes

that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

25. As per claim 18, Sankaran teaches a method comprising:

specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);

limiting a value of addresses exported into a table (paragraph 35, where a threshold may be reached).

Sankaran does not expressly teach receiving a command to limit the number of routes.

Cisco teaches a prefix limit comprising:

receiving a command from a client that specifies an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

26. As per claim 19, Sankaran further teaches a counter to count the routes exported and generate a count, wherein the control unit compared the count to the export limit and limits the number of routes exported based on the comparison (paragraphs 43-45, where a threshold is compared to the value of the table).

27. As per claim 20, Sankaran further teaches rejecting additional routes exported when the counted number of routes exceeds the export limit (paragraph 45, where additional routes may be discarded once a threshold is reached).

28. As per claim 21, Hunt further teaches including an exterior routing protocol that supports a larger number of routes than the interior routing protocol (Hunt, page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF). BGP protocols maintain routes between ASes, therefore is theoretically capable of maintaining routing information to all systems on a network. OSPF is used within an AS, and therefore maintains routing information only with a selection of computers on the greater network).

29. As per claim 22, neither reference expressly teaches communicating with an ISP. However, each utilizes BGP, which is well known in the art as a communication protocol between various ISPs, as the border protocol is used between ISPs.

30. As per claim 23, Sankaran further teaches a plurality of instances of the counter executing on the system, wherein the control unit separately limits the number of routes exported to each of the instances (paragraph 37, where multiple different threshold algorithms may be present).

31. As per claim 24, Sankaran further teaches that the control unit includes a plurality of counters to maintain respective counts for the number of routes exported to each of the instances (paragraph 37, where multiple different threshold algorithms may be present).

32. As per claim 25, Sankaran further teaches that the control unit identifies an instance of the interior routing protocol to which routes were exported, accesses the respective counter to compare the stored count with an associated limit, and rejects additional routes exported to the identified instance based on the comparison (paragraph 37, where multiple different threshold algorithms may be present).

33. As per claim 26, Sankaran further teaches that they system comprises a router (abstract, where the method is for use on a router).

34. As per claim 27, Sankaran teaches a computer-readable medium comprising:
specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);
maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached); and
rejecting additional addresses when the count exceeds an address limit (paragraph 45, where additional routes may be discarded once a threshold is reached).

Sankaran does not expressly teach receiving a command to limit the number of routes.

Cisco teaches a prefix limit comprising:

receiving a command from a client for an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a

value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

35. As per claim 30, Sankaran further teaches updating muting information to associate the routes with a maximum metric that defines a maximum distance from the network device to neighboring network devices when the count exceeds the export limit (paragraph 5, where the redundant routes may be preferenced by distance); and advertising the updated routing information to a network device (paragraph 3, where the network may redefine paths using BGP or OSPF);

updating routing information when the count exceeds the limit to clear the routes exported (paragraph 45, where routes may be deleted from the table when a limit is reached or exceeded).

Cisco further teaches waiting for an intervention by the client before accepting additional routes (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

36. As per claim 31, Sankaran further teaches a plurality of instances of the counter executing on the system, wherein the control unit separately limits the number of routes exported to each of the instances (paragraph 37, where multiple different threshold algorithms may be present).

37. As per claim 32, Cisco further teaches receiving a command from a client for an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined). Sankaran further teaches maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached).

38. As per claim 33, Sankaran teaches a method comprising:
specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);

maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached); and
rejecting additional addresses when the count exceeds an address limit (paragraph 45, where additional routes may be discarded once a threshold is reached).

Sankaran does not expressly teach receiving a command to limit the number of routes. Cisco teaches a prefix limit comprising:

receiving a command from a client for an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

39. As per claim 34, Sankaran teaches a method comprising:

specifying a limit of routes exported to a table (paragraph 29, where a threshold may be established);

maintaining a value of addresses exported into a table (paragraph 35, where a threshold may be reached).

Sankaran does not expressly teach receiving a command to limit the number of routes.

Cisco teaches a prefix limit comprising:

receiving prefix limit as an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes

that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

40. As per claims 35, Sankaran further teaches comparing the respective value for the identified one of the instances (paragraphs 43-45, the threshold value is determined to be reached or not).

41. As per claim 37, Sankaran teaches a system comprising:

a control unit that prevents a protocol module from exporting more than an export limit of the network routes to another protocol (paragraph 45, where additional routes may be discarded once a threshold is reached).

Sankaran does not expressly teach receiving a command to limit the number of routes. Cisco teaches a prefix limit comprising:

receiving prefix limit as an export limit (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive a command such as taught by Cisco to limit the amount of routes in a system such as that taught by Sankaran. Sankaran's system allows the router to maintain a value of routes and reject additional routes after it reaches a certain threshold, being a percentage of the memory. Allowing a command to set such as that taught by Cisco would provide the benefit of having a configurable limit to the number of routes. The number of routes as taught by Cisco would have been obvious to one of ordinary skill in

the art, as each route takes up a certain amount of memory, such that a memory usage threshold is equivalent to a number threshold.

Neither Sankaran nor Cisco expressly teaches an interior and an exterior protocol within the same device. Hunt teaches a method of configuring interior gateways wherein a statement announces routes from an external system such that:

routes are exported to an interior routing protocol (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a limiting method such as that taught by Sankaran with a route exporting method such as that taught by Hunt. The limiting method prevents the table from exceeding a defined memory space, which prevents overflow. This would be beneficial in any routing scheme, as memory is defined and limited in all computer systems. Hunt's method limits what type of routes are defined in the routing table, which would further limit the routes that could be updated in Sankaran's method. Further, in order for both protocols to be able to advertise routes and exchange to other routers, both protocols must run on the same system, as taught by Hunt, as both OSPF and BGP are active.

42. As per claim 38, Sankaran further teaches that the system comprises a router (abstract, where the method is for use on a router).

43. As per claim 39, Cisco further teaches the interface receives the command from a remote client (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

44. As per claim 40, Cisco further teaches the remote client comprises one of a human user and an automated script (page 4, step 4, where the maximum prefix limit to a neighbor is defined).

45. As per claim 41, Hunt further teaches that the first protocol module comprises an exterior routing protocol module and the second routing protocol module comprises an interior routing protocol module (page 10, paragraph 1, where the routes are received via BGP and advertised via OSPF, showing that the addresses were received from an external protocol (BGP) and were exported to an interior protocol (OSPF)).

46. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over as applied to claims 1 above, and further in view of US 6 212 188, Rochberger et al.

47. As per claim 6,

Neither reference teaches a method to update the routing information in response to a state change of the device. Rochberger teaches a method of routing in a network when a node is in overload state comprising:

updating routing information to set an overload bit of a link state prefix associated with the routes when the count exceeds the export limit (Column 2, lines 8-14, where the state information is contained in PTSE messages. Along with column 5, lines 30-35, where the overloaded node sends a PTSE message to other nodes notifying itself as being overloaded, it is inherent that the PTSE contains

the overload information, and is changed when the node goes into overload status); and
advertising the updated routing information to a network device (Column 5, lines 30-35, where the overloaded node sends a message to other nodes notifying itself as being overloaded).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include an overload notification such as that described by Rochberger in a network system such as that taught by Sankaran. Sankaran's system would benefit, as it could notify other devices when the address limit within a table has been reached, relieving the processing required for rejecting additional addresses sent. The notification method described by Rochberger can be used in any system, as it only describes how a node reacts to being in an overload state, and does not affect the performance of the node in normal functions. This would allow the notification method to be used in any system, including that taught by Sankaran, and with any routing protocols, such as those taught by Hunt.

Conclusion

48. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS RICHARDSON whose telephone number is (571) 270-1191. The examiner can normally be reached on Monday through Thursday, 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/687,989

Page 30

Art Unit: 2444

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444